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EXAMINER	
WOLDEMARIAM, AKILILU K	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/755,868	KALEVO, OSSI	
	Examiner	Art Unit	
	AKLILU k. WOLDEMARIAM	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 March 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *01/22/2008, 07/05/2007, 11/09/2005, 06/17/2004 and 01/12/2004.*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

Response to Amendment

1. Applicant's amendment field on March 09, 2008 has been entered. Claims 1, 6-7, 12, 14, 16-18, 23- 26, 28-32, 35 and 37 have been amended. Claim 38 has been added. Claims 1-38 are still pending, with claims 1, 12, 23, 30, 31, 32 and 37-38 being an independent.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 12 is rejected under second paragraph of 35 U.S.C 112 because " it is not clear what is configured on line 7" or "configured so that on line 7 is clear what it is referring to".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 37 is rejected under 35 U.S.C. 102(b) as being anticipated by Weinberger et al., "Weinberger" (U.S. Patent number 5, 680, 129).

Regarding claim 37, *Weinberger discloses* a device for image processing *(see fig.15)* comprising:

a decoder which is arranged to process an image with a limited number of bits in the bit string of a pixel, which decoder is also arranged to decode the pixel to its original

number of bits, wherein the decoder is arranged to recognize the code word from said bit string and to decode said pixel by the encoding method indicated in the code word, wherein the decoder comprises a memory means for storing at least one decoded pixel as a prediction value, wherein the decoder is arranged to retrieve the prediction value corresponding to the pixel from said *memory (see fig.12 and 13 and column 16, lines 45- 67, fig.12 is a block diagram of an image decoder 1201 corresponding to the image compressor 201. The decoder 1201 accepts a compressed image from the image compressor 201 and stores this compressed image in a compressed image buffer 1203 and column 17, lines 1-20, the decoding table selector 709 feeds the appropriate decoding table to the decoder 1301. The decoder 1301 also receives the encoded pixel value).*

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. *Claims 1-4, 8-13, 15, 19-24, 26-33, 36 and 38 rejected under 35 U.S.C. 103(a) as being unpatentable over Weinberger as applied to above in view of Kato (U.S. Patent number 5, 392, 037).*

Regarding claims 1 and 23, *Weinberger discloses* a method for image processing and an apparatus for image processing, in which the number of bits is limited in an encoded bit string of a pixel *(see fig.2 and column 4, lines 49-61, it is*

another object of the inventions to overcome the minimum of one-bit per pixel limitation of Huffman coding) comprising:

searching for a prediction value corresponding to said pixels *(see column 4, lines 58-61, the image processor uses the context of a pixel to be compressed to predict the value of the pixel. The image compressor compares the predicted values of each pixel with the corresponding actual value);*

in the bit string, encoding a code word to the encoded bit string to indicate the selected encoding method *(see column 6, lines 28-31, an additional fundamental limitation of Huffman codes is that they require a minimum code length of one bit per encoding);* and

the encoding the pixel into the encoded bit string so that the encoded bit string has a restricted number of bits that is fixed for substantially all of the encoded pixels in the image *(see column 6, lines 14-17, the compressor of the present invention is based on a fixed context model, but is tuned for efficient performance in conjunction with a collection of context-conditioned Huffman codes).*

Weinberger does not disclose after the prediction value has been found, determining the difference between the pixel and the prediction value, to select the method for encoding the bit string of said pixel.

However, Kato discloses after the prediction value has been found, determining the difference between the pixel and the prediction value, to select the method for encoding the bit string of said pixel *(see column 3, lines 15-17, calculating an estimator*

error which is equal to a difference between the estimate (prediction value) and input data(pixel)).

It would have been obvious to ordinary skill in the art at the time when the invention was made to use Kato's after the prediction value has been found, determining the difference between the pixel and the prediction value, to select the method for encoding the bit string of said pixel in Weinberger's a method for image processing, in which the number of bits is limited in an encoded bit string of a pixel because it will allow to provide an improved apparatus for efficient encoding, [Kato, see column 3, lines 9-10].

Regarding claim 2, *Kato discloses* the method according to claim 1, wherein the code word to indicate the selected encoding method is of variable length *(see column 4, lines 31-40, a fifth aspect of this invention provides a method of efficient encoding which comprises the steps of encoding input data into a variable length code and arranging the variable-length code into a store region of a given capacity).*

Regarding claim 3, *Kato discloses* the method according to claim 1, wherein quantizing is used to encode the bit string, wherein first a limit value is determined, wherein the difference is compared with the limit value in such a way that when the difference is smaller, the difference is quantized in the encoding of the bit string, whereas when the difference is greater, the original value of the pixel is quantized in the encoding of the bit string *(see column 3, lines 15-25, calculating an estimation error which is equal to a difference between the estimate (prediction value) and the input data).*

Regarding claim 4, *Kato discloses* the method according to claim 3, wherein the code word is determined on the basis of the original and limited number of bits in the pixel in such a way that the code word length does not exceed N - (M - 1) where M corresponds to the limited number of bits and N corresponds to the original number of bits *(see column 9, lines 5-38, to minimize the code length Mi, that is, to enhance the encoding efficiency, it is good that the smallest value which satisfies the relation(2) is used to as the divisor data).*

Regarding claim 8, *Kato discloses* the method according to claim 1, wherein said prediction value is the value of one encoded pixel value or the average of several encoded pixel values *(see item 504, fig.5, and averaging circuit).*

Regarding claim 9, *Kato discloses* the method according to claim 1, wherein in the absence of a prediction value, the bit number is limited by quantizing said pixel *(see fig.4 a and b, the efficient encoding apparatus includes a blocking circuit 402, a DCT circuit 403, a quantization circuit 406, an encoding circuit 407, and multiplexing circuit 408).*

Regarding claim 10, Kato discloses the method according to claim 1, wherein in the method, the bit string is decoded by using a decoding method corresponding to the used encoding method *(see column 20, lines 42-47, fig.4(b) shows a decoding apparatus which uses a decoding method according to the third embodiment of this invention. With reference to Fig.4 (b), an input terminal 410 is subjected to coded data CCi which is transmitted directly or indirectly from the efficient encoding apparatus of Fig.4 (a)).*

Regarding claim 11, *Weinberger discloses* the method according to claim 1, wherein the pixel is encoded for transfer between a camera module and an electronic device *(see column 22, lines 46-50, the image sources 1505 may include devices such as digital cameras and scanners. The computer system 1501 may also be connected to computer networks).*

Regarding claim 12, *Weinberger discloses* an image processing system (see fig.15) which is configured to process an image with a limited number of bits in an encoded bit string of a pixel comprising:

an encoder for encoding the pixel to the limited number of bits (*see item 209, fig.2 and column 4, lines 49-50, it is another object of the invention to overcome the minimum of one –bit per pixel limitation of Huffman coding);*

a prediction module for searching for a prediction value corresponding to the pixel *(see item 109, fig.1 and column 4, lines 58-61, the image processor uses the context of a pixel to be compressed to predict the value of the pixel. The image compressor compares the predicted values of each pixel with the corresponding actual value);*
and

the configured so that the encoded bit string has a restricted number of bits that is fixed for substantially all of the encoded pixels in the image (*see column 49-50, it is another object of the invention to overcome the minimum of one-bit per limitation of Huffman coding).*

Weinberger does not disclose a difference module configured so that after the prediction value has been found the difference between the pixel and the prediction

value is determined, wherein the means for encoding the pixel are encoder is arranged to encode said pixel by an encoding method indicated by the difference as well as to encode, in the encoded bit string, a code word to indicate the encoding method indicated by the difference.

However, Kato discloses a difference module configured so that after the prediction value has been found the difference between the pixel and the prediction value is determined, wherein the means for encoding the pixel are encoder is arranged to encode said pixel by an encoding method indicated by the difference as well as to encode, in the encoded bit string, a code word to indicate the encoding method indicated by the difference *(see column 3, lines 15-17, calculating an estimation error which is equal to difference between the estimate (prediction value) and the input data(pixel)).*

It would have been obvious to ordinary skill in the art at the time when the invention was made to use Kato's a difference module configured so that after the prediction value has been found the difference between the pixel and the prediction value is determined, wherein the means for encoding the pixel are encoder is arranged to encode said pixel by an encoding method indicated by the difference as well as to encode, in the encoded bit string, a code word to indicate the encoding method indicated by the difference in Weinberger's an image processing system which is configured to process an image with a limited number of bits in an encoded bit string of a pixel because it will allow to provide an improved apparatus for efficient encoding, *[Kato, see column 3, lines 9-10].*

Regarding claim 13, *Kato discloses* the system according to claim 12, wherein in the absence of a prediction value, the system is arranged to quantize the value of said pixel *(see fig.4(a) as shown in Fig. 4(a), the efficient encoding apparatus includes a blocking circuit 402, a DCT circuit 403, a quantization circuit 404, an encoding circuit 405, a quantization circuit 406, an encoding circuit 407, and a multiplexing circuit 408).*

Regarding claim 14, the system according to claim 12, wherein the system is also configured for determining a limit value, wherein the system is also arranged to compare said difference with said limit value in such a way that when the difference is smaller, the system is arranged to quantize said difference, whereas when the difference is greater, the system is arranged to quantize the original value of the pixel.

Regarding claim 15, *Kato discloses* the system according to claim 14, wherein the system is arranged to determine said code word on the basis of the original and limited number of bits in the pixel in such a way that the code word length does not exceed N - (M - 1) where M corresponds to the limited number of bits and N corresponds to the original number of bits *(see column 9, lines 5-38, to minimize the code length Mi, that is, to enhance the encoding efficiency, it is good that the smallest value which satisfies the relation(2) is used to as the divisor data).*

Regarding claim 19, *Kato discloses* the system according to claim 12, wherein said prediction value is the value of one encoded pixel value or the average of several encoded pixel values *(see item 504, fig.5, averaging circuit).*

Regarding claim 20, *Weinberger discloses* the system according to claim 12, wherein the system also comprises means for decoding the bit string to correspond to

the encoding *(see column 7, lines 1-3, the encoded image may then be decoded by an image decoder, such as the one shown in the block diagram of FIG.12).*

Regarding claim 21, *Weinberger discloses* the system according to claim 12, wherein the system also comprises a camera module and an electronic device *(see column 22, lines 47-49, the image sources 1505 may include devices such as digital cameras and scanner. The computer system 1501 may also be connected to computer networks).*

Regarding claim 22, *Weinberger discloses* the system according to claim 21, wherein the electronic device comprises means for performing mobile communication *(see column 15, lines 25-26, This computer may be connected to other computers via a network such as a local –area network (LAN). A wide –area network or via a communication links such as telephone or cable television networks).*

Regarding claim 24, *Kato discloses* the device according to claim 23, wherein the device also comprises quantizer for quantizing said pixel and for quantizing the value of the original pixel in the absence of a prediction value *(see fig. 4 a and b, as shown in fig. 4(a), the efficient encoding apparatus a blocking circuit 402, a DCT circuit 403, a quantization circuit 404, an encoding circuit 405, a quantization circuit 406, an encoding circuit 407, and a multiplexing 408).*

Regarding claim 25, *Kato discloses* the device according to claim 23, wherein the device is configured for determining a limit value, wherein the device is also arranged to compare said difference with said limit value in such a way that when the difference is smaller, the device is arranged to quantize said difference, whereas when

the difference is greater, the device is arranged to quantize the original value of the pixel *(see column 3, lines 15-17, calculating an estimation error which is equal to difference between the estimate (prediction value) and the input data(pixel)).*

Regarding claim 26, *Weinberger discloses* the device according to claim 23, wherein the device is also configured for decoding the bit string in the way indicated by the code word (*see column 14, lines 58-64, a fixed table, known to both the encoder and the decoder is used. This alternative saves table overhead for contexts that occur only a small number of times. For example, for T=8, a possible code can assign code words of length 3 to the events 0, 1 and -1, code words of length 4 to events 2, -2, 3 and -3 and code words of length 5 to other events).*

Regarding claim 27, *Weinberger discloses* the device according to claim 23, wherein the device also comprises a camera module *(see column 22, lines 46-48, the image sources 1505 may include devices such as digital cameras and scanners. The computer system 1501 may also be connected to computer networks).*

Regarding claim 28, *Weinberger discloses* the device according to claim 27, wherein the device also comprises means a transceiver for performing mobile communication *(see column 15, 25-27, this computer may be connected to other computers via a network such as a local-area network (LAN), a wide-area network or via a communication links such as telephone or cable television networks).*

Regarding claim 29, Weinberger discloses the device according to claim 23, wherein the device also comprises means a transceiver for performing mobile communication *(see column 15, 25-27, this computer may be connected to other*

computers via a network such as a local-area network (LAN), a wide-area network or via a communication links such as telephone or cable television networks).

Regarding claim 30, *Weinberger discloses* a readable storage for storing software instructions for image processing with a limited number of bits in an encoded the bit string of a pixel, as well as for encoding the pixel to the limited number of bits *(see item 209, fig.2 and column 4, lines 49-50, it is another object of the invention to overcome the minimum of one-bit per pixel limitation of Huffman coding).*

, wherein: where said software instructions are executed by a processor:

The following limitations are intended use, intended use has no weight for the purpose of examining claim 30 because an old device or an apparatus or processor can not have a new intended use.

" for searching for a prediction value corresponding to the pixel;

as well as computer instructions to determine for determining the difference between the pixel and the prediction value and to encode for encoding the bit string of the pixel by the encoding method indicated in the difference, as well as for encoding , in the encoded bit string, the code word indicating the encoding method indicated by the difference; and

for encoding the pixel into the encoded bit string so that the encoded bit string has a restricted number of bits that is fixed for substantially all of the encoded of pixels in an image."

Regarding claims 31, 32 and 38, *Weinberger discloses* a camera module for image processing and circuit image processing and a device for image processing,

which camera module is fitted to process an image with a limited number of bits in an encoded bit string of a pixel (*see column 22, lines 46-49, the image sources 1505 may include devices such as digital cameras and scanners. The computer system 1501 may also be connected to computer networks)* comprising:

an encoder for encoding the pixel to the limited number of bits *(see column 4, lines 49-50, it is another object of the invention to overcome the minimum of one-bit per pixel limitation of Huffman coding);*

a search module for searching for a prediction value corresponding to the pixel *(see column 4, lines 58-61, the image processor uses the context of a pixel to be compressed to predict value of the pixel. The image compressor compares the predicted values of each pixel with the corresponding actual value)*; and

for encoding the pixel into the encoded bit string so that the encoded bit string has a restricted number of bits that is fixed for substantially all of the encoded pixels in the image (*see column 49-50, it is another object of the invention to overcome the minimum of one-bit per limitation of Huffman coding).*

Weinberger does not disclose the camera module is configured to determine the difference between the pixel and the prediction value, wherein the encoder is arranged to encode said pixel by the encoding method indicated by the difference as well as to encode, in the encoded bit string, a code word to indicate the encoding method indicated by the difference.

Kato discloses the camera module is configured to determine the difference between the pixel and the prediction value, wherein the encoder is arranged to encode

said pixel by the encoding method indicated by the difference as well as to encode, in the encoded bit string, a code word to indicate the encoding method indicated by the difference *(see column 3, lines 15-17, calculating an estimation error which is equal to difference between the estimate (prediction value) and the input data(pixel)).*

It would have been obvious to ordinary skill in the art at the time when the invention was made to use Kato's the camera module is configured to determine the difference between the pixel and the prediction value, wherein the encoder is arranged to encode said pixel by the encoding method indicated by the difference as well as to encode, in the encoded bit string, a code word to indicate the encoding method indicated by the difference in Weinberger's a camera module for image processing, which camera module is fitted to process an image with a limited number of bits in an encoded bit string of a pixel because it will allow to provide an improved apparatus for efficient encoding, *[Kato, see column 3, lines 9-10]*

Regarding claim 33, *Kato discloses* the circuit according to claim 32, wherein in the absence of a prediction value, the encoder is arranged to quantize the value of said pixel *(see column 19, as shown in fig. 4(a), efficient encoding apparatus includes a blocking circuit 404, DCT circuit 403, a quantization circuit 404, an encoding circuit 405, a quantization circuit 406, an encoding circuit 407, and a multiplexing 408).*

Regarding claim 36, *Weinberger discloses* the circuit according to claim 32, wherein the decoder is arranged to decode the bit string by a decoding method corresponding to the encoding method used *(see column 7, lines 1-15, the encoder*

image may then be decoded by an image decoder, such as the one shown in the block diagram of Fig.12).

8. Claims 6-7, 17, 18 and 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weinberger in view of Kato as applied to claims 1 and 32 above, and further in view of Jones et al., “Jones” (U.S. Patent number 4, 847, 866).

Weinberger and Kato disclose a method for image processing and an apparatus for image processing, in which the number of bits is limited in an encoded bit string of a pixel.

Weinberger and Kato do not disclose the encoding method to be used is selected between differential pulse code modulation and pulse code modulation coding in such a way that code word lengths greater than one indicate the use of differential pulse code modulation coding, wherein the code word length of one indicates the use of pulse code modulation coding.

However, Jones discloses regarding claim 6, the method according to claim 1, wherein the encoding method to be used is selected between differential pulse code modulation and pulse code modulation coding in such a way that code word lengths greater than one indicate the use of differential pulse code modulation coding, wherein the code word length of one indicates the use of pulse code modulation coding *(see column 2, lines 40-50, the DPCM system also includes a quantizer 14 which receives a difference signal e(n) from the output of a difference circuit 12. The difference circuits 12 receives on its inputs, an input signal x(n) and a signal x(n)).*

It would have been obvious to ordinary skill in the art at the time when the invention was made to use Jones's the encoding method to be used is selected between differential pulse code modulation and pulse code modulation coding in such a way that code word lengths greater than one indicate the use of differential pulse code modulation coding, wherein the code word length of one indicates the use of pulse code modulation coding in the combined method of Weinberger and Kato of the encoding method to be used is selected between differential pulse code modulation and pulse code modulation coding in such a way that code word lengths greater than one indicate the use of differential pulse code modulation coding, wherein the code word length of one indicates the use of pulse code modulation coding because it will allow to minimize the accumulation of quantizing noise, *[Jones, see column 1, lines 59-60].*

Regarding claim 7, *Jones discloses* the method according to claim 1, wherein the encoding method to be used is selected between ordinary differential pulse code modulation coding and smart differential pulse code modulation coding in such a way that code word lengths greater than one indicate the use of differential pulse code modulation coding, wherein the code word length of one indicates the use of smart differential pulse code modulation coding *(see column 2, lines 40-50, the DPCM system also includes a quantizer 14 which receives a difference signal e(n) from the output of a difference circuit 12. The difference circuits 12 receives on its inputs, an input signal x(n) and a signal x(n)).*

Regarding claim 17, Jones discloses the system according to claim 12, wherein the system also comprises a differential pulse code modulation codec and a

pulse code modulation codec, wherein code word lengths greater than one indicate the use of the differential pulse code modulation codec, wherein the code word length of one indicates the use of the pulse code modulation codec *(see column 2, lines 40-50, the DPCM system also includes a quantizer 14 which receives a difference signal e(n) from the output of a difference circuit 12. The difference circuits 12 receives on its inputs, an input signal x(n) and a signal x(n)).*

Regarding claim 18, *Jones discloses* the system according to claim 12, wherein the system also comprises an ordinary differential pulse code modulation codec and a smart differential pulse code modulation codec, wherein code word lengths greater than one indicate the use of the differential pulse code modulation codec, wherein the code word length of one indicates the use of the smart differential pulse code modulation codec (*(see column 2, lines 40-50, the DPCM system also includes a quantizer 14 which receives a difference signal e(n) from the output of a difference circuit 12. The difference circuits 12 receives on its inputs, an input signal x(n) and a signal x(n)).*

Regarding claim 34, *Jones discloses* the circuit according to claim 32, wherein the encoding method to be used is differential pulse code modulation or pulse code modulation coding *(see column 2, lines 40-50, the DPCM system also includes a quantizer 14 which receives a difference signal e(n) from the output of a difference circuit 12. The difference circuits 12 receives on its inputs, an input signal x(n) and a signal x(n)).*

Regarding claim 35, *Jones discloses* the circuit according to claim 32, wherein the encoding method to be used is ordinary differential pulse code modulation coding or

smart differential pulse code modulation coding *(see column 2, lines 40-50, the DPCM system also includes a quantizer 14 which receives a difference signal e(n) from the output of a difference circuit 12. The difference circuits 12 receives on its inputs, an input signal x(n) and a signal x(n)).*

9. Claims 5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weinberger in view of Kato as applied to claims to 1 and 12above, and further in view of Anderson et al., "Anderson" (U.S. Patent number 5, 790, 705).

Weinberger and Kato disclose a method for image processing and an apparatus for image processing, in which the number of bits is limited in an encoded bit string of a pixel.

Weinberger and Kato do not disclose code word is determined on the basis of the original and limited number of bits in the pixel in such a way that the code word length is two when the change is less than 32 bits, and that the code word length is three when the change is more than 31 and less than 128 bits, wherein when the change exceeds 128 bits, the code word length is selected to be one, wherein the encoding method is changed.

However Anderson discloses regarding claims 5 and 16, the method according to claim 4, wherein said code word is determined on the basis of the original and limited number of bits in the pixel in such a way that the code word length is two when the change is less than 32 bits, and that the code word length is three when the change is more than 31 and less than 128 bits, wherein when the change exceeds 128 bits, the

code word length is selected to be one, wherein the encoding method is changed (see fig. 4A and column 5, lines 22-28 and 45-55, a 32 bit word with the compressed data, a four pixel sequence is used. In a Bayer pattern of image data, a line of pixels of green-blue-green)

It would have been obvious to ordinary skill in the art at the time when the invention was made to use Anderson's said code word is determined on the basis of the original and limited number of bits in the pixel in such a way that the code word length is two when the change is less than 32 bits, and that the code word length is three when the change is more than 31 and less than 128 bits, wherein when the change exceeds 128 bits, the code word length is selected to be one, wherein the encoding method is changed in the combined method of Weinberger and Kato of a method for image processing and an apparatus for image processing , in which the number of bits is limited in an encoded bit string of a pixel because it will allow to compress image data for byte-wide memory configuration efficiently, *[Anderson, see column 2, lines 9-12].*

Response to Arguments

10. Applicant's arguments field on March 09, 2008 has been respectfully considered, but they are not persuasive. Regarding 35 U.S.C 102 and 103 rejections of the claim inventions, the applicant argued that with the references (Weinberger, Kato, Jones and Anderson) do not disclose the claim 1, 37 and 38, for example in claim 1, the claim limitation, "encoding a code word to indicate the selected encoding method, and encoding the pixel into the encoded bit string so that encoded bit string has a restricted number of bits that is fixed for substantially all of the encoded pixels in the image."

Examiner disagreed because Weinberger discloses the encoding the pixel into the encoded bit string so that the encoded bit string has a restricted number of bits that is fixed for substantially all of the encoded pixels in the image *(see column 6, lines 14-17, the compressor of the present invention is based on a fixed context model, but is tuned for efficient performance in conjunction with a collection of context-conditioned Huffman codes).*

Weinberger discloses regarding claim 37, a decoder which is arranged to process an image with a limited number of bits in the bit string of a pixel, which decoder is also arranged to decode the pixel to its original number of bits, wherein the decoder is arranged to recognize the code word from said bit string and to decode said pixel by the encoding method indicated in the code word (col. 14, lines 58-67), wherein the decoder comprises a memory means for storing at least one decoded pixel as a prediction value, wherein the decoder is arranged to retrieve the prediction value corresponding to the pixel from said *memory (see fig.12 and 13 and column 16, lines 45- 67, fig.12 is a block diagram of an image decoder 1201 corresponding to the image compressor 201.*

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AKLILU k. WOLDEMARIAM whose telephone number is (571)270-3247. The examiner can normally be reached on Monday-Thursday 6:30 a.m-5:00 p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on 571-272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Samir Ahmed,
Examiner
Art Unit 2624

/A. k. W./
Examiner, Art Unit 2624
05/17/2008

/Samir A. Ahmed/
Supervisory Patent Examiner, Art Unit 2624